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THE MORTALITY STATISTICS OF THE CENSUS IN RELATION TO OCCUPATIONS.

FOR the first time the census report on mortality and vital statistics furnishes data showing the influence of occupation upon the death rate, and some of the principal features of this part of the report are outlined below. This report has been delayed a long time owing to the necessity of waiting for the completion of the population data relative to occupations for the computation of the death rates in necessary details.

The record of deaths for the United States, as a whole, and consequently the data concerning occupations for the whole country are incomplete and unsatisfactory, because of the impossibility of securing an accurate return of all deaths occurring in localities where such returns depended upon a canvass made by the enumerators; but for about one-third of the population the data concerning deaths were secured by transcribing local registration records, based upon physicians' certificates, and for this proportion of the population, and for such areas, the data are fairly accurate.

The area covered by this class of returns, and designated as the "registration area," consists of the states of Massachusetts, Connecticut, New Hampshire, Vermont, Rhode Island, New York, New Jersey, and Delaware, the District of Columbia, and eighty-three cities in other states, which are enumerated in an appended list.

The total population of this registration area was 19,659,440 of whom about 7,837,000 were males ten years of age and over, 5,809,803, or 74.13 per cent. being reported as engaged in occupations included in the classification adopted for the mortality statistics. The total number of deaths of males at ten years of age and over, in this area, was 124,591, and of these 71,346, or 57.26 per cent., were reported as engaged in the des-

ignated occupations. These numbers are large enough to afford some reliable results.

Generally speaking the classification of occupations adopted for the population is too extended and minute to be followed in classifying the occupations of decedents, as the subdivision of deaths by ages and causes results, in many cases, in too small numbers for the computation of reliable death rates for such details.

The general occupation tables compiled for the population of the whole country cover 218 titles, giving the occupation of 18,821,090 males of which number 17,765,270 are included in the 102 titles embraced in the tables showing the deaths in relation to occupation. The difference, which is but 1,055,820, is less than 6 per cent. of the whole number, and is distributed among 116 occupations.

The general distinction of what a person does, and the conditions surrounding his employment, rather than technical skill, proprietary interest, or character of products, being most important in studying the effect of occupation upon the mortality at different ages, or from different causes, many minor occupations prosecuted under generally similar conditions may properly be grouped and considered together.

The following figures and remarks relate to occupations of males only.

The aggregate number of occupied males in the registration area and its subdivisions, with the number in each class of occupations and the proportion in each class per 1000 of the total, is shown in Table I.

Table II. shows the proportion and distribution of the population in the various classes of occupations in the several areas and the corresponding figures for the deaths follow.

The death rates per 1000 of male population are shown in Table III.

Tables I, II, and III show the aggregate number and proportion of the population and decedents in each class of occupations in the several areas, with the corresponding death rates, but the

TABLE I.

Population in each class, and proportion per 1000	Registration area	Registration states			Registration cities in other states
		Total	Cities	Rural	
Population, all classes.....	5,809,803	3,491,407	2,043,724	1,447,683	2,318,396
Professional.....	207,268	116,873	80,552	36,321	90,395
Clerical and official.....	624,126	324,032	261,706	62,326	300,094
Mercantile and trading.....	528,225	290,951	223,218	67,733	237,274
Entertainment.....	102,623	54,771	40,802	13,969	47,852
Personal service, police, and military.....	149,834	78,243	63,815	14,428	71,591
Laboring and servant.....	947,088	468,721	311,092	157,629	478,367
Manufacturing and mechan- ical industries.....	1,975,937	1,167,886	827,998	339,888	808,051
Agriculture, transportation, and other outdoor.....	1,274,702	989,930	234,541	755,389	284,772
Proportion in each class per 1000					
Professional.....	35.68	33.47	39.41	25.09	38.99
Clerical and official.....	107.43	92.81	128.05	43.05	129.44
Mercantile and trading.....	90.92	83.33	109.22	46.79	102.34
Entertainment.....	17.66	15.69	19.96	9.65	20.64
Personal service, police, and military.....	25.79	22.41	31.22	9.97	30.88
Laboring and servant.....	163.02	134.25	152.22	108.88	206.34
Manufacturing and mechan- ical industries.....	340.10	334.50	405.14	234.78	348.54
Agriculture, transportation, and other outdoor.....	219.41	283.53	114.76	521.79	122.83

TABLE II.

Classes of occupations	Registra- tion area	Registration states			Registra- tion cities in other states
		Total	Cities	Rural	
All classes.....	12.28	13.84	15.69	11.21	9.94
Professional.....	13.50	15.70	16.04	14.95	10.66
Clerical and official.....	7.69	9.80	10.26	7.91	5.41
Mercantile and trading.....	10.54	12.25	12.87	10.22	8.43
Entertainment.....	13.08	14.53	15.86	10.67	11.41
Personal service, police, and military...	12.49	15.39	16.52	10.40	9.32
Laboring and servant.....	18.24	22.58	25.15	17.52	13.99
Manufacturing and mechanical indus- tries.....	11.38	12.96	14.03	10.36	9.10
Agriculture, transportation, and other outdoor.....	11.92	12.13	17.39	10.49	11.20

TABLE III.

Deaths in each class, and proportion per 1000	Registration area	Registration states			Registration cities in other states
		Total	Cities	Rural	
Deaths, all classes.....	71,346	48,306	32,071	16,235	23,040
Professional.....	2,799	1,835	1,292	543	964
Clerical and official.....	4,802	3,177	2,684	493	1,625
Mercantile and trading.....	5,566	3,565	2,873	692	2,001
Entertainment.....	1,342	796	647	149	546
Personal service, police, and military.....	1,871	1,204	1,054	150	667
Laboring and servant.....	17,278	10,586	7,824	2,762	6,692
Manufacturing and mechan- ical industries.....	22,493	15,138	11,618	3,520	7,355
Agriculture, transportation, and other outdoor.....	15,195	12,005	4,079	7,926	3,190
Proportion in each class per 1000					
Professional.....	39.23	37.99	40.29	33.45	41.83
Clerical and official.....	67.31	65.77	83.69	30.37	70.53
Mercantile and trading.....	78.01	73.80	89.58	42.62	86.85
Entertainment.....	18.81	16.48	20.17	9.18	23.70
Personal service, police, and military.....	26.22	24.92	32.86	9.24	28.95
Laboring and servant.....	242.17	219.14	243.96	170.13	290.45
Manufacturing and mechan- ical industries.....	315.26	313.38	362.26	216.82	319.23
Agriculture, transportation, and other outdoor.....	212.98	248.52	127.19	488.20	138.45

variations in the gross death rates of the different classes are due to differences in the age distribution of the population engaged, as well as in the varying conditions under which the occupations are pursued.

The importance of taking into consideration the age distribution of the population contributing the deaths in comparing the death rates of persons engaged in different occupations will be seen from the following table which shows, for the registration states, the number of males reported as engaged in each class of occupations, in the aggregate, and in each of four age groups; the number of deaths among the same during the census year, and the percentage of the population and deaths in each age group.

TABLE IV.

Population, deaths, and percentages in each class	Age groups				
	All ages	15 to 25 years	25 to 45 years	45 to 65 years	65 years and over
Population	3,491,407	853,690	1,587,177	800,280	197,284
Professional	116,873	16,049	61,623	30,613	8,085
Clerical and official	324,032	111,162	138,947	59,327	10,197
Mercantile and trading	290,951	53,428	149,154	73,652	12,393
Entertainment	54,771	8,879	30,655	13,403	1,658
Personal service, police, and military	78,243	13,555	42,000	19,094	3,025
Laboring and servant	468,721	121,874	210,222	101,623	20,710
Manufacturing and mechan- ical industries	1,167,886	309,904	546,934	247,479	45,554
Agriculture, transportation, and other outdoor	989,930	218,839	407,342	255,089	95,662
Per cent. in each class		24.45	45.45	22.92	5.65
Professional		13.73	52.72	26.19	6.92
Clerical and official		34.36	42.88	18.31	3.15
Mercantile and trading		18.36	51.37	25.31	4.27
Entertainment		16.21	55.97	24.47	3.03
Personal service, police, and military		17.32	53.68	24.40	3.87
Laboring and servant		26.00	44.85	21.68	4.42
Manufacturing and mechan- ical industries		26.54	46.83	21.19	3.90
Agriculture, transportation, and other outdoor		22.11	41.15	25.77	9.66
Deaths	48,306	4,762	14,748	14,728	13,827
Professional	1,835	81	522	585	641
Clerical and official	3,177	685	1,271	810	393
Mercantile and trading	3,565	188	1,110	1,350	912
Entertainment	796	76	392	244	84
Personal service, police, and military	1,204	88	471	439	206
Laboring and servant	10,586	1,186	3,566	3,374	2,379
Manufacturing and mechan- ical industries	15,138	1,555	5,021	4,982	3,538
Agriculture, transportation, and other outdoor	12,005	903	2,395	2,944	5,674
Per cent. in each class		9.86	30.51	30.49	28.62
Professional		4.41	28.45	31.88	34.93
Clerical and official		21.56	40.01	25.50	12.37
Mercantile and trading		5.27	31.14	22.72	11.02
Entertainment		9.55	49.25	30.65	10.55
Personal service, police, and military		7.31	39.12	36.46	17.11
Laboring and servant		11.20	33.69	31.87	22.47
Manufacturing and mechan- ical industries		10.27	33.17	32.91	23.37
Agriculture, transportation, and other outdoor		7.52	19.95	24.52	47.26

These figures show that 28.57 per cent. of the males engaged in the specified occupations were 45 years of age and over, and that these furnish 59.11 per cent. of the deaths reported. Nearly one-third of the whole number of deaths occurred at 65 years or over, and in less than 6 per cent. of the population.

In the age group 15 to 25 years the greatest proportions of population occurred in the clerical and official class (34.36 per cent.), the class engaged in manufacturing and mechanical industries (26.54 per cent.) and the laboring and servant class 26 per cent. It is in this age group that the death rate is lowest.

In the age group 65 years and over, in which the death rate is highest, the greatest proportions of population are found in the class engaged in agriculture, transportation, and other outdoor pursuits (9.66 per cent.) and the professional class (6.92 per cent.).

The death rates at all ages and in each age group, corresponding with the two preceding tables, are shown below.

TABLE V.

All males, and males in specified occupations and classes of occupations	All ages	15 to 25 years	25 to 45 years	45 to 65 years	65 years and over
All males	21.54	7.16	11.59	23.04	78.30
Males in specified occupations.	13.84	5.58	9.29	18.43	70.09
Professional.....	15.70	5.05	8.47	19.11	79.28
Clerical and official	9.80	6.16	9.15	13.65	38.54
Mercantile and trading.....	12.25	3.52	7.43	17.11	73.59
Entertainment.....	14.53	8.56	12.79	18.20	50.66
Personal service, police, and military	15.39	6.49	11.21	22.99	68.10
Laboring and servant	22.58	9.73	16.96	33.20	114.87
Manufacturing and mechanical industries	12.96	5.02	9.18	20.13	77.67
Agriculture, transportation, and other outdoor	12.13	4.13	5.88	11.54	59.31

The first line in the preceding table gives the death rate of all males, without regard to occupation, for comparative purposes. The gross death rate of all males (21.54 per 1000) and that of

males engaged in the specified occupations (13.84 per 1000) are not comparable, as the former is based upon deaths occurring at all ages, and includes a large proportion of children not found in the latter. Above the age of 15 years it will be seen that the death rates of males in the designated occupations are uniformly lower.

In order to obtain an adequate basis for comparing the death rates of persons engaged in different occupations which will show the relative healthfulness of such occupations, it is necessary to eliminate the disproportions in numbers and the inequalities in the age distribution, and get results which will represent an equal number of persons in each occupation, distributed equally as to ages.

This has been done in the reports of the registrar-general of England for males between 25 and 65 years of age, by using the average death rate of all males between 25 and 65 years to determine the number of males necessary to produce 1000 deaths at a given rate, and the number so found is divided into the age groups 25 to 45, and 45 to 65 years upon the same proportion as that existing in the number furnishing the original rate.

Pursuing this plan for the registration states we find that there were 2,711,129 males in this area between 25 and 65 years of age, 1,788,854 being between 25 and 45, and 922,275 between 45 and 65 years. At the average death rate of all males between these ages there were 1000 deaths to each 64,558 males between 25 and 65 years of age. Subdividing this number in the proportions indicated for the population stated above gives 42,597 between 25 and 45, and 21,961 between 45 and 65. These numbers correspond very closely with those in the English report, namely, 64,641 between 25 and 65 years, with 41,920 under, and 22,721 over 45 years.

The 1000 deaths among the 64,558 males of the stated ages is used as the standard, and the comparative number is found for each occupation by multiplying 42,597 by the death rate in that occupation at 25 to 45 years, and 21,961 by the correspond-

ing death rate at 45 to 65 years, and adding together the numbers so found. For instance, 42,597 lawyers between 25 and 45 years at the death rate of 8.50 per 1000 would give 362 deaths; and 21,961 between 45 and 65 years at the death rate of 21.68 per 1000 would give 476 deaths, making a total of 838, which represents the mortality of lawyers between 25 and 65 years as compared with the standard mortality of all males of the same ages, which is stated as 1000.

The table given below shows the death rates, at these ages, of all males, of occupied males, and of males in certain occupations in the registration states, with the mortality of those in each class or occupation, computed as above, in comparison with the corresponding results in England.

TABLE VI.

Occupations	Death rates				Comparative mortality based on an equal number in each occupation, divided equally as to ages.	
	England, 1880-1882		Registration states, 1890			
	25 to 45 years	45 to 65 years	25 to 45 years	45 to 65 years	England	Registration states
All males.....	10.16	25.27	11.59	23.04	1,000	1,000
Occupied males.....	9.71	24.63	9.29	18.43	967	800
Clergymen.....	4.64	15.93	5.88	14.72	556	574
Lawyers.....	7.54	23.13	8.50	21.68	842	838
Physicians and surgeons.....	11.57	28.03	9.52	21.15	1,122	870
Teachers.....	6.41	19.84	6.18	14.35	719	578
Musicians and teachers of music...	13.78	32.39	10.59	25.65	1,314	1,014
Commercial travelers and salesmen	9.04	25.03	5.78	12.97	948	531
Apothecaries, pharmacists, etc....	10.58	25.16	11.47	27.79	1,015	1,099
Butchers.....	12.16	29.08	11.83	26.24	1,170	1,080
Bakers and confectioners.....	8.70	26.12	11.19	28.45	958	1,101
Barbers and hairdressers.....	13.64	33.25	11.80	24.89	1,327	1,049
Tailors.....	10.73	26.47	8.57	28.17	1,051	984
Boot and shoe makers.....	9.31	23.36	8.65	21.26	921	835
Bookbinders.....	11.73	29.72	16.67	13.76	1,167	1,012
Plasterers and whitewashers.....	7.79	25.07	13.20	25.56	896	1,124
Cabinetmakers and upholsterers...	9.55	24.77	9.31	21.90	963	878
Carpenters and joiners.....	7.77	21.74	7.11	16.60	820	667
Blacksmiths.....	9.29	25.67	9.02	18.56	973	792

It will be seen that the death rate of all males in the age group 25 to 45 years in the registration states (11.59) was somewhat higher than the English rate at this age (10.16), but in the age group 45 to 65 years it was lower in the registration states (23.04) than in England.

In the lower age group the death rates were higher in the registration states than in England among clergymen (registration states 5.88, England 4.64), lawyers (registration states 8.50, England 7.54), apothecaries (registration states 11.47, England 10.58), bakers and confectioners (registration states 11.19, England 8.70), bookbinders (registration states 16.67, England 11.73), and plasterers and whitewashers (registration states 13.20, England 7.79), but were lower in all other occupations specified.

In the higher age group the rates were higher in the registration states among apothecaries (registration states 27.79, England 25.16), bakers and confectioners (registration states 28.45, England 26.12), tailors (registration states 28.17, England 26.47), and plasterers and whitewashers (registration states 25.56, England 25.07), and were lower in all other occupations specified.

The comparative mortality figures, computed as described above, are shown in the last two columns. From these it appears that in the registration states the mortality was higher than the standard figure for all males (1000), for musicians and teachers of music (1014), apothecaries (1099), butchers (1080), bakers and confectioners (1101), barbers (1049), bookbinders (1012), and plasterers and whitewashers (1124), and lower than the standard for all other occupations, the rate for those in all occupations being represented by 800.

The comparative mortality was also higher in the registration states than in England among clergymen (registration states 574, England 556), apothecaries (registration states 1099, England 1015), and bakers and confectioners (registration states 1101, England 958), but was lower than in England among those in all other occupations specified.

TABLE VII.

Occupations	Mortality at 25 to 65 years on basis of 1000 deaths among	
	All males	Occupied males
All males, and males in specified occupations	1000	1249
Total in selected occupations.....	800	1000
Professional :		
Architects, artists, and teachers of art, etc.....	805	1007
Clergymen.....	574	716
Journalists.....	1085	1355
Lawyers.....	838	1046
Musicians and teachers of music.....	1014	1266
Physicians and surgeons.....	870	1086
Professors, teachers, literary and scientific persons	771	964
Others of this class.....	573	716
Clerical and official :		
Stenographers and typewriters.....	563	704
Accountants, bookkeepers, clerks, and copyists.	995	1244
Bankers, brokers, and officials of companies....	222	277
Collectors, auctioneers, and agents.....	576	719
Mercantile and trading :		
Apothecaries, pharmacists, etc.....	1099	1371
Commercial travelers and salesmen.....	531	663
Merchants and dealers.....	711	887
Hucksters and peddlers.....	956	1194
Entertainment :		
Hotel and boarding-house keepers.....	730	913
Saloon keepers, wine and liquor dealers, etc....	1055	1320
Personal service, police and military :		
Barbers and hairdressers.....	1049	1311
Janitors and sextons.....	954	1193
Launderers.....	1119	1395
Policemen, watchmen, and detectives.....	864	1081
Soldiers, sailors, and marines (United States)...	1915	2380
Others of this class.....	919	1148
Laboring and servant :		
Laborers.....	1501	1875
Messengers and newsboys.....	918	1147
Servants.....	1132	1414
Manufacturing and mechanical industries :		
Bakers and confectioners.....	1101	1374
Blacksmiths.....	792	989
Bleachers, dyers, and scourers.....	807	1008
Bookbinders.....	1012	1271
Boot and shoe makers.....	835	1042
Brassfounders and coppersmiths.....	676	845
Brewers, distillers, and rectifiers.....	1030	1283
Butchers.....	1080	1349
Cabinetmakers and upholsterers.....	878	1095
Carpenters and joiners.....	667	833

While the figures in Table VI show the relative mortality of males in each specified occupation in comparison with the average mortality of all males, and indicate the relative mortality in each occupation in comparison with the others, the latter is better shown by taking the mortality of the total occupied males, computed in the same way, as the standard of comparison, and this is done in Table VII for the registration states which gives results for males between 25 and 65 years of age according to both standards, and for a more extended list of occupations.

TABLE VIII.

Occupations	Mortality at 25 to 65 years on basis of 1000 deaths among	
	All males	Occupied males
Cigar makers and tobacco workers.....	1301	1624
Compositors, printers, and pressmen.	963	1204
Coopers.....	1033	1290
Engineers and firemen (not locomotive).....	858	1072
Glass blowers and glass workers.....	828	1035
Harness and saddle makers, trunk makers, etc.	818	1022
Hat and cap makers.....	1490	1864
Iron and steel workers.....	708	883
Leather curriers, dressers, finishers, and tanners.	664	829
Machinists.....	761	950
Marble and stone cutters.....	974	1218
Masons (brick and stone).....	807	1008
Mill and factory operatives (textiles).....	614	768
Millers (flour and grist).....	619	774
Painters, glaziers, and varnishers.....	934	1167
Plasterers and whitewashers.....	1124	1404
Plumbers, and gas and steam fitters.....	1021	1275
Tailors.....	984	1226
Tinners and tinware makers.....	960	1200
Others of this class.....	795	994
Agriculture, transportation, and other outdoor....		
Boatmen and canal men.....	1324	1654
Draymen, hackmen, teamsters, drivers, etc....	897	1122
Farmers, farm laborers, gardeners, etc.....	358	446
Livery-stable keepers and hostlers.....	851	1063
Lumbermen and raftsmen.....	721	900
Miners and quarrymen.....	546	682
Sailors, fishermen, and pilots.....	1071	1338
Steam-railroad employés.....	559	700
Telegraph and telephone operators, electric- light men, etc.....	600	750

The mortality figures given in the last column of Table VIII are apparently higher than those in the first column, but this is only relatively so, the comparative mortality of all males being 1249, or 25 per cent. higher than that of occupied males.

At the average death rate of males between 25 and 65 years in the specified occupations there would be 1000 deaths to each 80,972 males, instead of 1000 deaths to each 64,558 males when the unoccupied are included.

Comparing the mortality of males in the different occupations, it will be seen that it was highest among soldiers, sailors, and marines (United States service, 2380), laborers (1875), hat and cap makers (1864), boatmen and canal men (1654), cigar makers and tobacco workers (1624), servants (1414), plasterers and whitewashers (1404), launderers (1395), bakers and confectioners (1374), apothecaries, pharmacists, etc. (1371), journalists (1355), butchers (1349), sailors, fishermen, and pilots (1338), saloon keepers, wine and liquor dealers, etc. (1320), barbers (1311), coopers (1290), brewers, distillers, and rectifiers (1283), plumbers (1275), and bookbinders (1271).

The occupations for which the mortality was most below the average are bankers, brokers, and officials of companies (277), farmers and farm laborers, etc. (446), commercial travelers (663), miners and quarrymen (682), steam-railroad employes (700), clergymen (716), and collectors, auctioneers, and agents (719).

The mortality, or death rate, from some of the principal causes and classes of causes in the whole registration area per 100,000 males engaged in each occupation is shown in Table IX.

Considering the causes of death specified in Table X, it will be seen that the average death rate from heart disease was 112.55 per 100,000, being highest in the professional class (156.32), the laboring and servant class (144.91), and the class engaged in agriculture, transportation, and other outdoor pursuits (121.52), and lowest in the clerical and official class (63.03).

TABLE IX.

	Death rates, due to					
	Heart disease	Con- sumption	Diseases of the nervous system	Diseases of the respir't'y system	Suicide	Acci- dents and injuries
Total selected occupations.....	112.55	249.65	132.72	203.09	16.92	97.54
Professional class.....	156.32	197.81	202.64	211.80	21.71	55.97
Architects, artists.....	102.83	233.71	121.53	140.23	42.07	28.05
Clergymen.....	229.36	185.10	293.74	313.86	4.02	56.33
Journalists.....	193.89	369.31	120.03	166.19	9.23	55.40
Lawyers.....	154.82	173.83	255.32	220.01	27.16	84.20
Musicians and teachers of music....	155.93	284.98	166.68	204.32	32.26	53.77
Physicians and surgeons.....	221.67	181.36	328.18	342.57	14.40	63.33
Professors, authors, teachers, and sci- entific persons.....	119.72	195.10	164.06	150.75	26.60	93.11
Others of this class.....	90.70	133.38	85.36	109.37	18.67	18.67
Clerical and official.....	63.03	211.83	82.86	125.91	17.73	35.46
Stenographers and typewriters.....	11.93	190.91	35.80	23.86	23.86	35.80
Accountants, bookkeepers, clerks, and copyists.....	61.62	275.84	83.94	142.41	18.84	36.15
Bankers, brokers, and officials of companies.....	50.53	40.04	50.53	62.93	9.53	22.88
Collectors, auctioneers, and agents..	87.52	125.48	118.09	132.86	23.20	41.12
Mercantile and trading.....	117.53	174.37	145.76	166.64	16.43	40.40
Apothecaries, pharmacists, etc.....	91.71	259.83	173.22	234.36	25.47	40.76
Commercial travelers and salesmen..	37.54	127.89	52.81	77.63	10.82	28.63
Merchants and dealers.....	160.23	187.54	194.87	203.20	17.99	45.30
Hucksters and peddlers.....	124.05	215.85	129.02	208.41	22.33	59.55
Entertainment.....	99.51	303.81	127.69	261.54	23.78	71.60
Hotel and boarding-house keepers...	172.70	202.31	212.18	241.78	19.74	59.21
Saloon keepers, wine and liquor dealers, etc.....	83.61	325.87	109.34	265.84	24.65	73.96
Personal service, police, and military..	118.13	280.98	124.14	225.58	29.37	82.09
Barbers and hairdressers.....	107.14	348.20	93.75	160.71	40.18	55.80
Janitors and sextons.....	162.63	225.18	112.59	344.03	37.53	93.83
Launderers.....	53.02	365.85	26.51	74.23	21.21	37.12
Policemen, watchmen, and detectives.	122.04	204.06	148.04	278.08	18.01	124.04
Soldiers, sailors, and marines (United States).....	167.68	372.61	260.83	232.88	27.95	121.10
Others of this class.....	147.90	190.17	200.74	338.09	42.26
Laboring and servant.....	144.91	387.31	155.53	332.20	17.25	181.93
Laborers.....	163.47	424.09	177.85	381.08	19.04	210.62
Messengers and newsboys.....	13.64	54.57	24.91	20.46	11.37
Servants.....	81.53	285.34	70.41	154.16	8.89	62.26
Manufacturing and mechanical indus- tries.....	101.17	267.57	121.01	182.75	17.97	73.79
Bakers and confectioners.....	93.46	291.37	130.11	199.75	25.66	42.15
Blacksmiths.....	131.63	230.66	155.79	221.21	22.95	64.01
Bleachers, dyers, and scourers.....	72.68	211.83	101.31	174.99	27.63	73.68
Bookbinders.....	75.79	407.35	104.21	208.41	28.42	9.47
Boot and shoe makers.....	162.30	318.47	195.22	250.34	19.14	65.84
Brassfounders and coppersmiths.....	79.10	338.98	84.75	158.19	5.65	45.20

TABLE X.

	Death rates, due to					
	Heart Disease	Con- sumption	Diseases of the nervous system	Diseases of the resp't'y system	Suicide	Acci- dents and in- juries
Brewers, distillers, and rectifiers . . .	96.41	271.17	96.41	216.93	36.16	66.29
Butchers	89.26	259.18	173.76	178.51	20.60	82.39
Cabinetmakers and upholsterers . . .	101.85	332.71	110.90	226.34	27.16	38.48
Carpenters and joiners	107.30	205.67	155.23	175.98	12.52	98.00
Cigar makers and tobacco workers . .	94.45	454.45	100.36	184.97	29.52	39.36
Compositors, printers, and pressmen .	73.51	343.50	73.51	130.98	12.03	37.42
Coopers	161.53	310.95	193.84	282.68	20.19	84.80
Engineers and firemen (not loco- motive	116.87	238.07	112.54	184.69	12.99	187.57
Glass blowers and glass workers . . .	65.00	346.50	88.00	121.00	22.00	49.50
Harness and saddle makers, trunk makers, etc.	86.44	285.26	108.05	198.82	25.93	43.22
Hat and cap makers	120.20	643.07	156.26	270.45	6.01	78.13
Iron and steel workers	63.26	188.47	78.75	157.49	11.62	71.00
Leather curriers, dressers, finishers, and tanners	97.56	185.04	94.20	164.85	10.09	74.01
Machinists	96.20	225.50	93.89	150.08	14.62	53.10
Marble and stone cutters	72.50	398.73	77.67	233.02	7.77	64.73
Masons (brick and stone)	118.82	271.75	130.58	239.98	24.70	125.87
Mill and factory operatives (textiles)	72.30	223.52	60.25	114.47	13.25	52.42
Millers (flour and grist)	169.59	245.91	211.99	211.99	8.48	101.76
Painters, glaziers, and varnishers . .	101.64	266.63	119.32	167.20	22.10	92.07
Plasterers and whitewashers	125.43	316.09	95.83	175.61	10.03	75.26
Plumbers and gas and steam fitters . .	69.61	232.70	65.63	141.21	5.97	47.73
Tailors	126.80	283.18	155.33	229.29	34.87	54.95
Tinners and tinware makers	58.11	302.16	78.45	188.85	29.05	95.88
Others of this class	84.05	267.26	113.46	165.57	19.33	58.83
Agriculture, transportation, and other outdoor	121.52	168.04	142.94	181.38	12.00	135.95
Boatmen and canal men	180.75	332.95	218.80	285.39	418.57
Draymen, hackmen, teamsters, driv- ers, etc.	76.43	236.38	78.32	180.23	8.49	117.01
Farmers, farm laborers, gardeners, etc.	150.82	133.07	182.25	194.16	12.80	66.74
Livery-stable keepers and hostlers . .	65.91	278.87	81.13	180.00	22.82	70.98
Lumbermen and raftsmen	87.60	131.41	102.20	189.81	29.20	160.61
Miners and quarrymen	93.71	136.96	104.52	212.65	7.20	277.92
Sailors, fishermen, and pilots	227.02	424.58	253.01	303.27	17.33	294.61
Steam-railroad employes	42.40	110.12	48.88	85.97	9.42	375.69
Telegraph and telephone operators, electric-light men, etc.	45.89	208.58	87.60	20.86	12.52	137.66

Of the individual occupations, the highest death rates occurred among clergymen (229.36), sailors, fishermen, and pilots (227.02), physicians and surgeons (221.67), journalists

(193.89), boatmen and canal men (180.75), hotel and boarding-house keepers (172.70), and millers (169.59), and the lowest rates from this cause among stenographers and typewriters (11.93), messengers and newsboys (13.64), commercial travelers and salesmen (37.54), steam-railroad employés (42.40), and telegraph and telephone operators, etc. (45.89).

The average death rate from consumption was 249.65 per 100,000, which was exceeded in the laboring and servant class (387.31), the entertainment class (303.81), the personal-service, police, and military class (280.98), and the class engaged in manufacturing and mechanical industries (267.57). It was below the average in the class engaged in agriculture, transportation, and other outdoor pursuits, in which it was lowest (168.04), the mercantile and trading class (174.27), the professional class (197.81), and the clerical and official class (211.83).

The highest death rates from consumption occurred among hat and cap makers (643.07), cigar makers and tobacco workers (454.45), laborers (424.09), sailors, fishermen, and pilots (424.45), bookbinders (407.35), marble and stone cutters (398.73), soldiers, sailors, and marines, United States service (372.61), and barbers (348.20). The lowest rates from this cause occurred among bankers, brokers, and officials of companies (40.04), messengers and newsboys (54.57), steam-railroad employés (110.12), collectors, auctioneers, and agents (125.48), commercial travelers and salesmen (127.89), farmers and farm laborers, etc. (133.07), and lumbermen and raftsmen (131.41).

In the principal occupations the death rates from consumption were above the average among bakers and confectioners (291.37), boot and shoe makers (318.47), cabinetmakers and upholsterers (332.71), compositors, printers, and pressmen (343.50), coopers (310.95), brick and stone masons (271.75), painters, glaziers, and varnishers (266.63), tailors (283.18), and accountants, bookkeepers, clerks, and copyists (274.84), and below the average among clergymen (185.10), lawyers (173.83), physicians (181.36), merchants (187.54), blacksmiths (230.66),

carpenters (205.67), iron and steel workers (188.47), leather carriers, tanners, etc. (185.04), machinists (225.50), and among all of those in the class engaged in agriculture, transportation, and other outdoor pursuits except sailors and watermen, and livery-stable keepers, etc.

The average death rate from diseases of the nervous system was 132.72 per 100,000. It was above the average in the professional class, in which it was highest (202.64), the laboring and servant class (155.43), the mercantile and trading class (145.76), and the class engaged in agriculture, transportation, and other outdoor pursuits (142.94), and was below the average in all other classes, being lowest in the clerical and official class (82.86).

Of the individual occupations the death rate from these diseases was highest among physicians (328.18), clergymen (293.74), soldiers, sailors, and marines, United States service (260.83), lawyers (255.32), and sailors, fishermen, and pilots (253.01). It was lowest among messengers and newsboys (20.46), launderers (26.51), stenographers and typewriters (35.80), and steam-railroad employés (48.48).

In the principal occupations the death rate from diseases of the nervous system was highest among brick and stone masons (239.98), tailors (229.29), boot and shoe makers (195.22), merchants (194.87), farmers and farm laborers (182.05), butchers (173.76), painters, glaziers, and varnishers (167.20), iron and steel workers (157.49), blacksmiths (155.79), carpenters (155.23), and machinists (150.08), and was lowest among bankers, brokers, and officials of companies (50.53), servants (70.41), draymen, hackmen, teamsters, etc. (78.32), accountants, bookkeepers, clerks, and copyists (83.94), cigar makers and tobacco workers (100.36), cabinetmakers and upholsterers (110.90), and mill and factory operatives (114.47).

The average death rate from diseases of the respiratory system was 203.09 per 100,000. It was above the average in the laboring and servant class (332.20), in which it was highest, the entertainment class (261.54), the personal-service, police,

and military class (225.58), and the professional class (211.80), and was below the average in all other classes, being lowest in the clerical and official class (125.91).

Of the individual occupations the death rate from these diseases was highest among laborers (381.08), janitors and sextons (344.03), physicians (342.57), sailors, fishermen, and pilots (303.27), boatmen and canal men (285.39), coopers (282.68), policemen, watchmen, etc. (278.08), and was lowest among messengers and newsboys (20.46), telegraph and telephone operators, etc. (20.86), stenographers and typewriters (23.86), bankers, brokers, and officials of companies (62.93), launderers (74.23), commercial travelers and salesmen (77.63), and steam-railroad employés (85.97).

Taking the principal occupations, the death rate from these diseases was highest among saloon keepers, etc. (265.84), boot and shoe makers (250.34), brick and stone masons (239.98), marble and stone cutters (233.02), cabinetmakers and upholsterers (226.34), blacksmiths (221.21), and lawyers (220.01), and was lowest among accountants, bookkeepers, clerks and copyists (142.41), machinists (150.08), iron and steel workers (157.49), carpenters (175.98), butchers (178.51), and bakers and confectioners (199.75).

The average death rate from suicide was 16.92 per 100,000. It was highest in the personal-service, police, and military class (29.37), the entertainment class (23.78), and the professional class (21.71), and was lowest in the class engaged in agriculture, transportation, and other outdoor pursuits (12).

In the individual occupations the death rate from suicide was highest among architects, artists, etc. (42.07), barbers (40.18), janitors and sextons (37.53), brewers, etc. (36.16), tailors (34.87), and musicians and teachers of music (32.26), and was lowest among clergymen (4.02), brassfounders, etc. (5.65), plumbers (5.97), and hat and cap makers (6.01).

Taking the principal occupations, the death rate from suicide was highest among lawyers (27.16), cabinetmakers, etc. (27.16), bakers and confectioners (25.66), blacksmiths (22.95), painters,

glaziers, and varnishers (22.10), butchers (20.60), boot and shoe makers (19.14), laborers (19.04), accountants, bookkeepers, clerks and copyists (18.84), and merchants (17.97), and was lowest among marble and stone cutters (7.77), steam-railroad employés (9.42), iron and steel workers (11.62), compositors, printers, and pressmen (12.03), carpenters (12.52), farmers and farm laborers (12.80), physicians (14.40), and machinists (14.62).

The average death rate from accidents and injuries, excluding suicide, was 97.54 per 100,000, and was above this average only in the laboring and servant class (181.93), and the class engaged in agriculture, transportation, and other outdoor pursuits (135.95).

In the individual occupations the highest death rates from accidents and injuries occurred among boatmen and canal men (418.57), steam-railroad employés (375.69), sailors, fishermen, and pilots (294.61), miners and quarrymen (277.92) laborers (210.62), engineers and firemen, not locomotive (187.57), lumbermen and raftsmen (160.61), telegraph and telephone operators etc. (137.66), brick and stone masons (125.87), policemen, watchmen, etc. (124.04), soldiers, sailors, and marines, United States service (121.10), and draymen, hackmen, teamsters, etc. (117.01).

The preceding table gives only a few of the principal causes of death for which the death rates in relation to occupation are presented in the report.

The analysis of the occupation data covers 134 pages, and gives, for each occupation, the number and proportion of the population engaged, the death and death rates by age periods, in the various areas, also the death rates and proportion of deaths due to different causes. The general tables of death in relation to occupation cover 337 pages.

There is no corresponding data for any previous census, and this work was designed to supply as complete a basis as the data would permit for future comparisons.

It is greatly to be regretted that there is such a wide diver-

sity in the laws and regulations adopted concerning the registration of deaths in various states and cities, especially in the forms employed for returning the deaths, and in the opinions of the local officers as to the importance of certain facts. In many places essential facts are omitted; in others they may be called for, but perhaps not used in the compilations of the local officers, and therefore not rigidly insisted upon; in still others the inquiry may be loosely stated, affording grounds for very different constructions.

The effect of these diversities is very apparent when—as in the census work—the effort is made to combine and analyze the returns from all such areas. This matter is treated at considerable length in the census report, and it is hoped that in future reports some of these defects may be remedied.

If the legislation now pending before Congress is enacted, and a permanent census service established upon the plan proposed by Hon. Carroll D. Wright, commissioner of labor, in charge of the eleventh census, and which in its relation to mortality and vital statistics was discussed by the writer in a paper read before the American Statistical Association (*Journal of the American Statistical Association*, Vol. V, No. 37, March 1897), there will be an annual report issued on this subject which will bring the central work of compilation much more closely in touch with that of the local statisticians.

LIST OF REGISTRATION CITIES IN NON-REGISTRATION STATES, FOR WHICH DATA ARE GIVEN IN THE REPORTS OF THE ELEVENTH CENSUS.

Fort Smith, Ark.	Dubuque, Ia.	Toledo, O.
Alameda, Cal.	Keokuk, Ia.	Allegheny, Pa.
Fresno, Cal.	Muscatine, Ia.	Altoona, Pa.
Los Angeles, Cal.	Louisville, Ky.	Erie, Pa.
Oakland, Cal.	Paducah, Ky.	Norristown, Pa.
Sacramento, Cal.	New Orleans, La.	Philadelphia, Pa.
San Francisco, Cal.	Lewiston, Me.	Pittsburg, Pa.
San Jose, Cal.	Baltimore, Md.	Reading, Pa.
Stockton, Cal.	Detroit, Mich.	Scranton, Pa.
Denver, Colo.	Manistee, Mich.	Titusville, Pa.

Atlanta, Ga.	Muskegon, Mich.	York, Pa.
Augusta, Ga.	Minneapolis, Minn.	Charleston, S. C.
Savannah, Ga.	St. Paul, Minn.	Chattanooga, Tenn.
Aurora, Ill.	Stillwater, Minn.	Knoxville, Tenn.
Chicago, Ill.	Jackson, Miss.	Memphis, Tenn.
Galesburg, Ill.	Kansas City, Mo.	Nashville, Tenn.
Jacksonville, Ill.	St. Louis, Mo.	Cleburne, Tex.
Ottawa, Ill.	Omaha, Neb.	Dallas, Tex.
Peoria, Ill.	Raleigh, N. C.	Fort Worth, Tex.
Rockford, Ill.	Chillicothe, O.	Galveston, Tex.
Evansville, Ind.	Cincinnati, O.	San Antonio, Tex.
Fort Wayne, Ind.	Cleveland, O.	Lynchburg, Va.
Indianapolis, Ind.	Columbus, O.	Petersburg, Va.
Laporte, Ind.	Dayton, C.	Richmond, Va.
Terre Haute, Ind.	Hamilton, O.	La Crosse, Wis.
Council Bluffs, Ia.	Portsmouth, O.	Milwaukee, Wis.
Davenport, Ia.	Springfield, O.	

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